

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A direct-conversion receiver for substantially removing DC offset signals in a mobile communication terminal, the receiver comprising:

converting means for down converting a modulated signal received from an antenna;

detecting means for detecting a difference between two DC offset signal components; and

adjusting means for substantially reducing the difference by determining whether the DC offset is zero and outputting a control voltage to adjust the DC offset signal to zero.

2. (Original) The receiver as claimed in claim 1, wherein the converting means comprises:

at least one mixer for mixing the signal provided from a low amplifier (LNA) with two I/Q components that are separated by 180° in phase;

at least one low pass filter for eliminating spurious signals generated in the mixers; and

at least one compensation amplifier for compensating the DC offset signal, wherein a first amplifier has a fixed gain and a second amplifier has a variable gain.

3. (Original) The receiver as claimed in claim 1, wherein said adjusting means comprises:

an amplifier for increasing the magnitude of the DC offset component;

an analog-to-digital converter (ADC) for transforming an analog DC offset signal into a digital signal;

a digital signal processor (DSP) for determining whether the DC offset is zero or not, and for outputting a control voltage to an automatic gain controller to adjust the DC offset signal to zero; and

a digital-to-analog converter (DAC) for transforming an output of the DSP into an analog signal.

4. (Original) The receiver as claimed in claim 1, further comprising:

a switching means for connecting the converting means to a detecting means;

and

at least one amplifier for amplifying signals provided from a subtracting means.

5. (Currently Amended) A method for substantially removing DC offset signals utilizing a direct-conversion receiver, the method comprising the steps of:

down-converting a modulated signal receiver from an antenna;

detecting a difference between the DC offset signal components from balanced mixers;

adjusting the difference between detected DC offset signal components to minimize the difference; and

determining whether the DC offset is zero and outputting a control voltage to adjust the DC offset signal to zero.

6. (Original) The method as claimed in claim 5, wherein the adjusting step includes the step of:

outputting a value to minimize the difference.

7. (Original) The method as claimed in claim 5, wherein the down-converting step includes the steps of:

mixing a signal provided from a low noise amplifier with two I/Q components generated in a local oscillator, respectively;

converting the mixed signal into a base band signal; and

amplifying the base band signal based upon a value generated by an adjustment means of the direct conversion receiver